FRAGMENTED INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN TYPE-3 IS INVERSELY ASSOCIATED WITH BREAST CANCER RISK.

We previously demonstrated that nipple aspirate fluid (NAF) can be obtained from virtually all women between the ages of 30 and 80, and that the level in NAF of insulin-like growth factor (IGF) binding protein type-3 (IGFBP-3), the most prevalent binding protein of IGF-1 and IGF-2, is directly associated with breast cancer risk. Fragments of IGFBP-3 (BP3-FR) have been found in a variety of body fluids from normal subjects, including lymph, serum and seminal plasma. IGFBP-3 fragments have been found to inhibit the mitogenic effects of IGF-1. The objectives of this report were to determine if 1) BP3-FR could be measured in NAF, and 2) levels were associated with breast cancer risk. Thirty-seven subjects provided specimens. BP3-FR was measurable in all subjects, with values ranging from 2-183 ng/mg. Levels of BP3-FR (p = 0.0092) were lower in women with in situ or invasive breast cancer than in those without. In summary, BP3-FR is measurable in breast aspirate fluid and the levels are inversely associated with breast cancer, suggesting that this marker may be useful for risk evaluation.